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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,719	06/26/2003	Anupam Sanyal	55061-41077	5796

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EXAMINER
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TOOMER, CEPHIA D

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/606,719

Applicant(s)

SANYAL, ANUPAM

Examiner

Cephia D. Toomer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Specification*

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-10 and 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,613,110. Although the conflicting claims are not identical, they are not patentably distinct from each other because the method steps are the same/similar but the preambles are different. However, no unobviousness is seen in this difference because the fuel composition of the patent is used in the same environment as that of

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the present invention and it would be reasonable to expect that the composition would increase efficiency of heat transfer of a furnace.

***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 8-10 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson (US 6,729,248).

Johnson teaches additives for coal-fired furnaces wherein the additives include an iron compound such as ferrous and/or ferric oxides (see abstract and col. 3, lines 59-66). The coal is Powder River Basin coal (PRB) (high calcium content) (see col.2, lines 1-3, 46-49). Johnson teaches that the iron is present in amount of at least 0.5 wt % (see col. 10-15). Johnson teaches that the additive can be contacted with the coal feed in a number of different ways, for example mixed with the coal feed at the shipping terminal, added to the coal reclaim belt or added to the coal bunkers (see col. 7, lines 15-21). Johnson teaches that furnace exit gas temperature decrease and desirably reduce emissivity and increase boiler heat transfer occurs with the use of the iron additive (see col. 8, lines 32-59).

Accordingly, Johnson teaching all the limitations of the claims anticipates the claims.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 6,729,248).

Johnson has been discussed above. Johnson fails to teach that the coal and additive are ground. However, it would have been obvious to one of ordinary skill in the art to have performed this step because it would ensure adequate mixing of the coal and additive.

7. Claims 1-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Buecker.

Buecker teaches using low-sulfur coal from Powder River Basin (PRB) as the primary fuel source for power plants. The coal is high in calcium. See page 1, first and fifth paragraphs. Buecker teaches that the coal handling facility contains a crusher granulator and this disclosure suggests that the coal is ground before use. See page 1, fourth paragraph). Buecker also teaches that the coal is combined with iron oxide before it is burned and that the chemical enhances the characteristics of the slag (see page 2, last two paragraphs). Buecker teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Buecker differs from the claims in that he does not specifically teach the claimed methods. However, no unobviousness is seen in this difference because Buecker teaches a coal composition that is similar to that of the present invention and he uses the coal composition in the same environment as Applicant. Therefore, it would be reasonable to expect that the coal composition of Buecker would increase efficiency of heat transfer of a furnace, absent evidence to the contrary.

In the second aspect, Buecker differs from the claims in that he does not specifically teach that the iron oxide is ferric oxide. However, it would have been obvious to one of ordinary skill in the art to have selected ferric oxide as the iron oxide because Buecker's general teaching of iron oxide encompasses ferric oxide.

In the third aspect, Buecker differs from the claims in that he does not specifically teach that the furnace exit gas temperature is reduced. However, it would be reasonable to expect that the temperature would be reduced since Buecker teaches a coal composition that is similar to that of the present invention and he uses the coal composition in the same environment as Applicant.

8. Claims 1-10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Radway (US 5,819,672).

Radway teaches treating coal with a darkening agent wherein the darkening agent is iron oxide (see abstract; col. 3, lines 15-32; example 1). Radway uses PRB coals which are known for their high calcium content (see col. 2, lines 42-49; example 1). Since Radway teaches that the darkening agent may be a solid it is implied that the coal/agent may be ground, especially in view of Radway teaching that the agent may be

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applied in any appropriate fashion (see col. 3, lines 60-64): Radway teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Radway differs from the claims in that he does not specifically teach the claimed methods. However, no unobviousness is seen in this difference because Radway teaches a coal composition that is similar to that of the present invention and he uses the coal composition in the same environment as Applicant. Therefore, it would be reasonable to expect that the coal composition of Radway would increase efficiency of heat transfer of a furnace.

In the second aspect, Radway differs from the claims in that he does not specifically teach that the iron oxide is ferric oxide. However, it would have been obvious to one of ordinary skill in the art to have selected ferric oxide as the iron oxide because Radway's general teaching of iron oxide encompasses ferric oxide.

In the third aspect, Radway differs from the claims in that he does not specifically teach that the furnace exit gas temperature is reduced. However, it would be reasonable to expect that the temperature would be reduced since Radway teaches a coal composition that is similar to that of the present invention and he uses the coal composition in the same environment as Applicant.

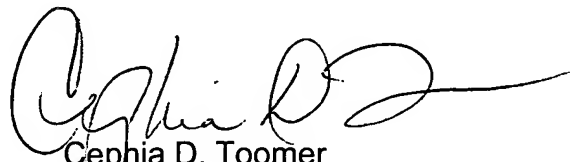
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cephia D. Toomer  
Primary Examiner  
Art Unit 1714

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